

FOR REFERENCE ONLY

LITTLE CALUMET RIVER**INDIANA****FLOOD CONTROL****RECREATIONAL NAVIGATION****GENERAL RECREATION**

SCOPE OF TALK

BACKGROUND OF STUDY

DEVELOPMENT CONCEPTS

DESCRIPTION OF ALTERNATIVES

COMPARISON OF ALTERNATIVES

SOCIAL & ENVIRONMENTAL IMPACTS

FUTURE ACTIONS

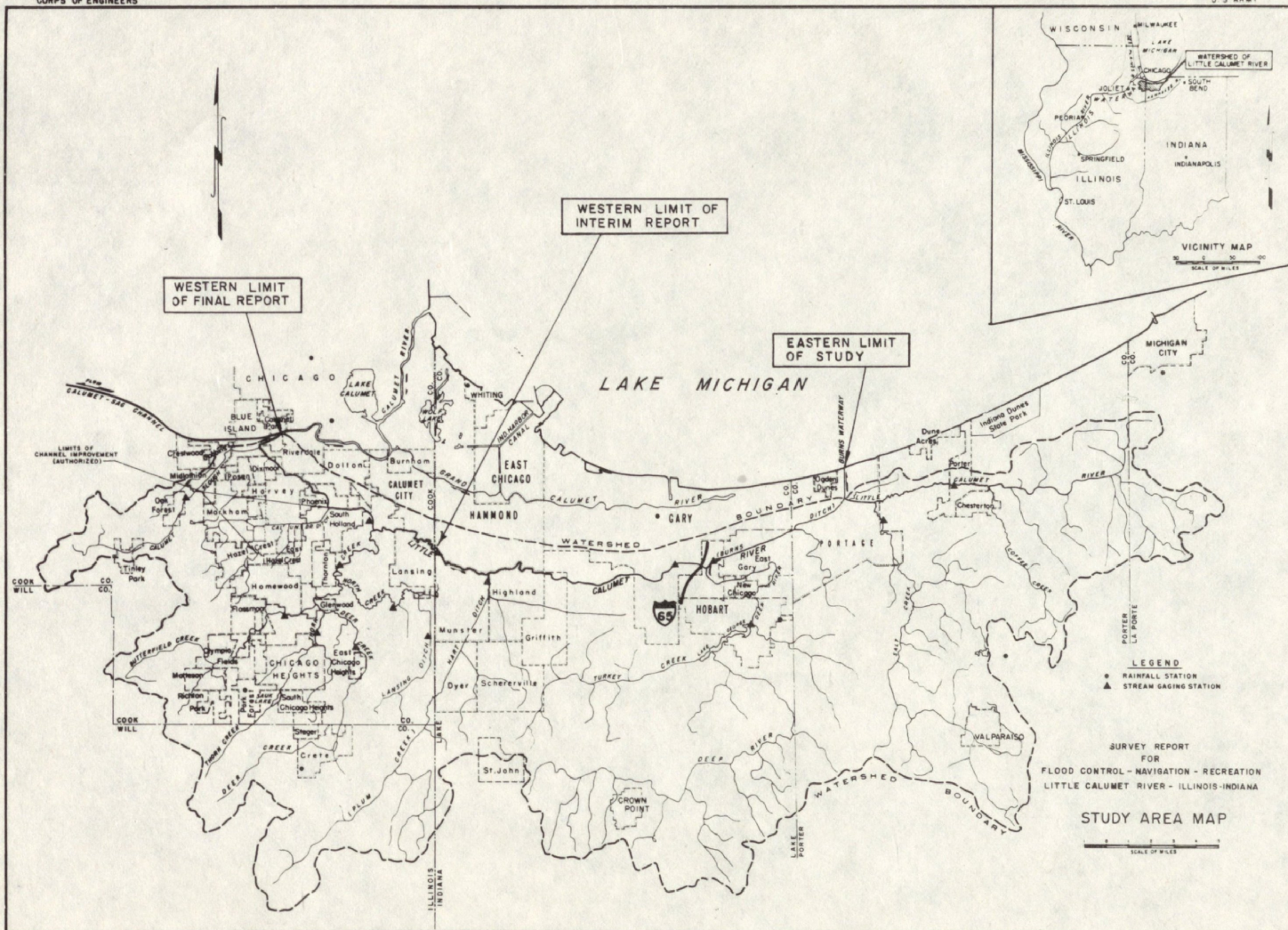
STUDY AUTHORIZATION
LITTLE CALUMET RIVER, ILLINOIS & INDIANA

HOUSE PUBLIC WORKS COMMITTEE RESOLUTION, JULY 1955

**DETERMINE WHETHER TO PROVIDE IMPROVEMENTS FOR
FLOOD CONTROL**

SENATE PUBLIC WORKS COMMITTEE RESOLUTION, JULY 1965

**DETERMINE THE ADVISABILITY OF PROVIDING RECREATIONAL
NAVIGATION FACILITIES**





LITTLE CALUMET RIVER BASIN
ILLINOIS & INDIANA

WATER RESOURCES NEEDS **LITTLE CALUMET RIVER BASIN**

FLOOD CONTROL

RECREATIONAL BOATING

GENERAL RECREATION

FISH AND WILDLIFE

OPEN SPACE

WATER QUALITY

FLOOD CONTROL CONCEPTS

PROVIDE PROTECTION FROM 200 YEAR FLOOD

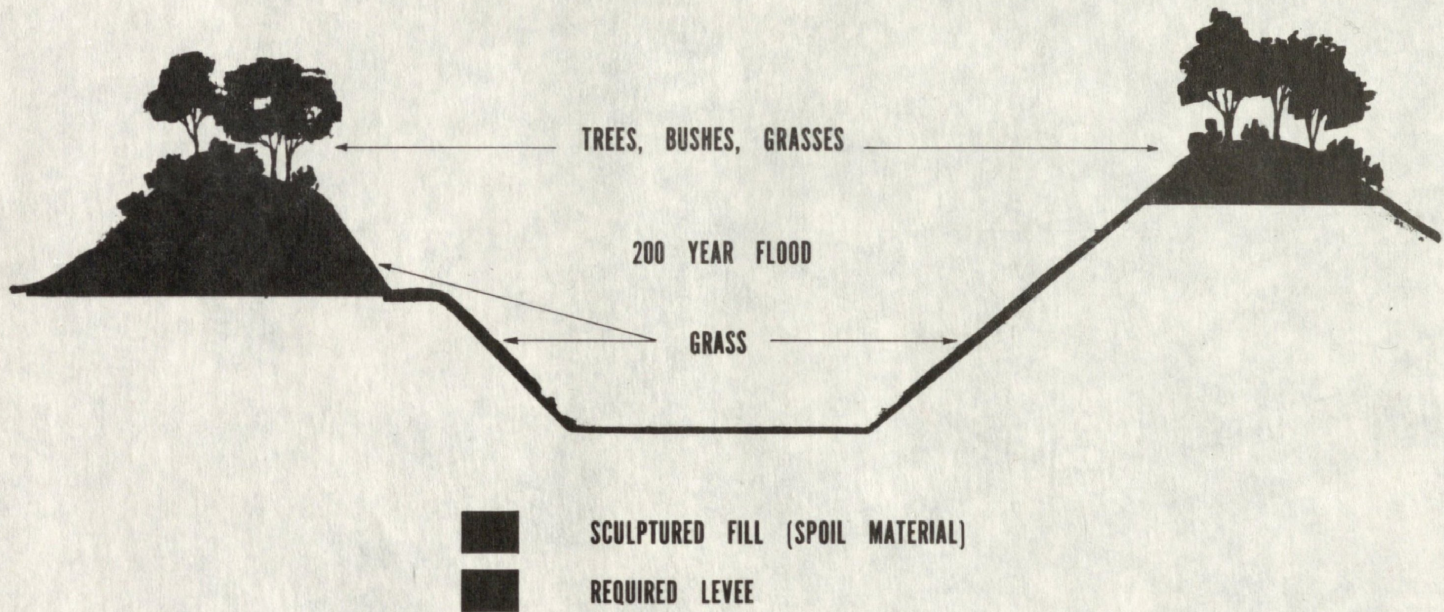
MAIN STEM CHANNEL IMPROVEMENTS

- CHANNEL IMPROVEMENTS & LEVEES
- BRIDGE ALTERATIONS

CONTROL STRUCTURE

- DIVERT FLOOD FLOWS TO LAKE MICHIGAN
- MAINTAIN CURRENT LOW FLOWS EAST & WEST

CHANNEL IMPROVEMENT CONCEPT



RECREATIONAL BOATING CONCEPTS

LAKE LEVEL BOATING CHANNEL OPTIONS

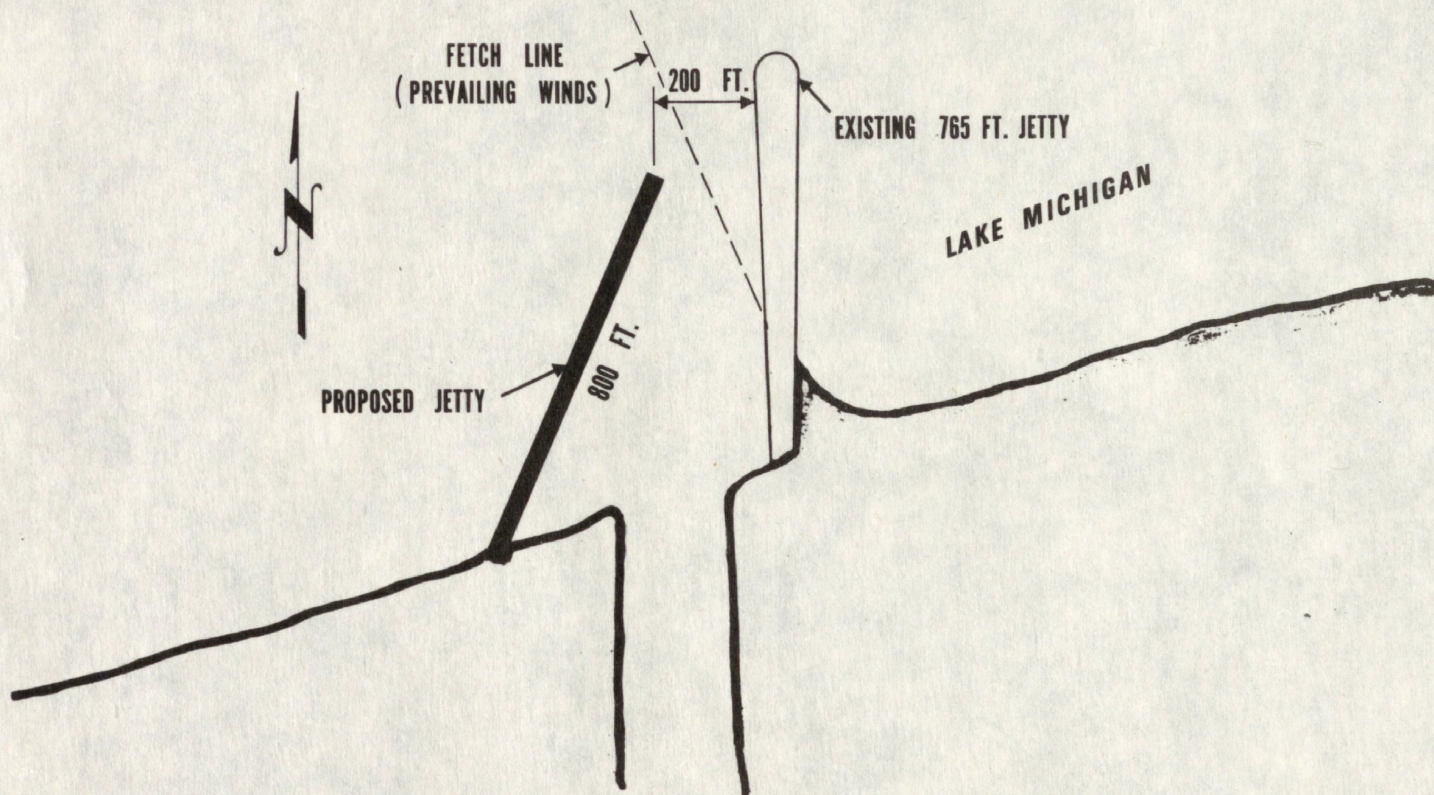
- LAKE TO DEEP RIVER - 8 MILES
- LAKE TO STATE LINE - 21 MILES

STRUCTURAL IMPROVEMENT - MOUTH OF BURNS WATERWAY

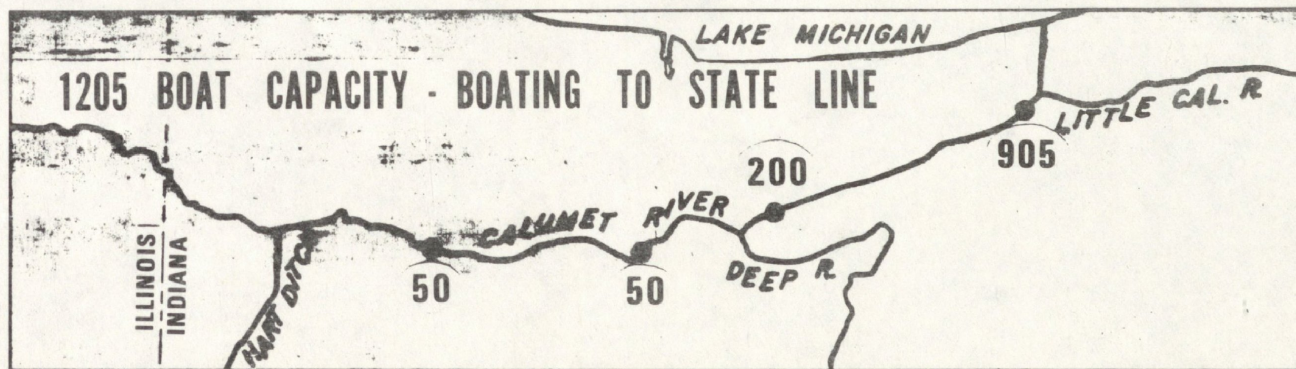
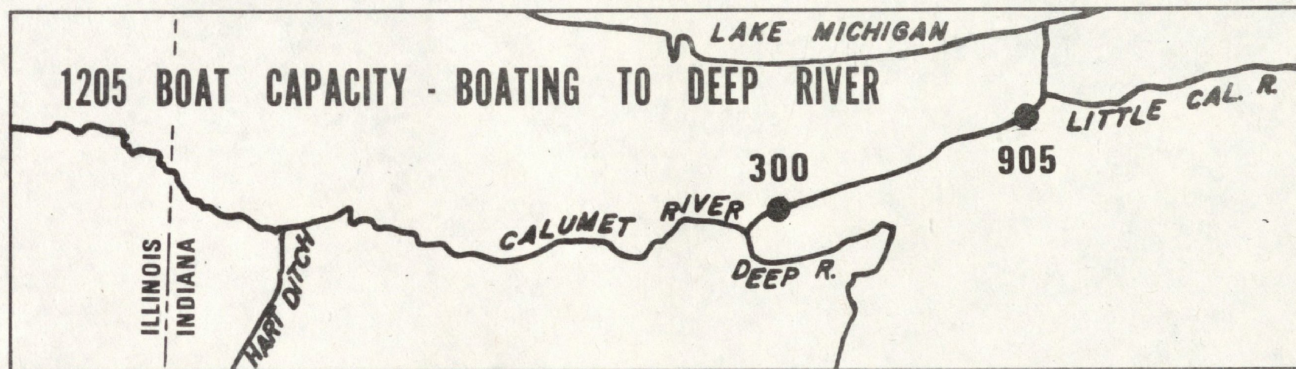
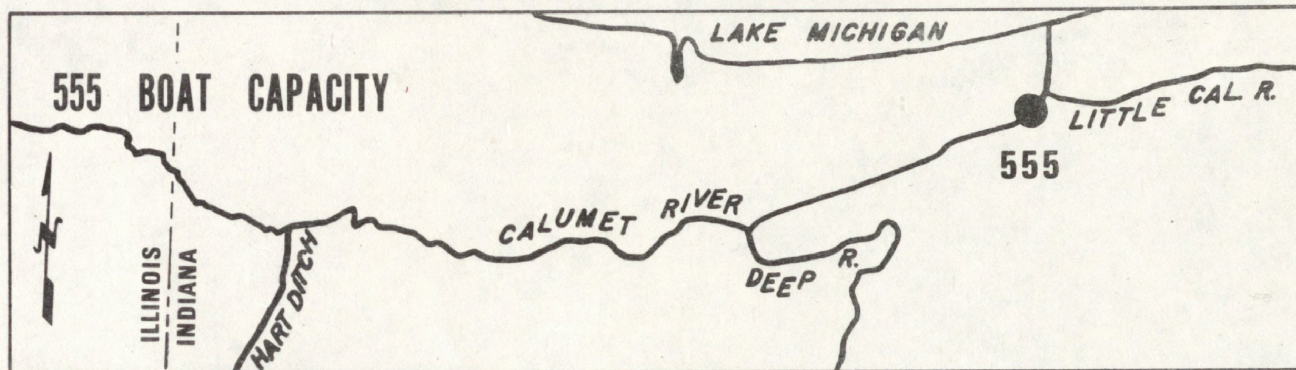
MARINA OPTIONS

- MAINTAIN EXISTING CAPACITY - 555 BOATS
- MEET PHASED DEMAND TO 2020 - 1,205 BOATS

STRUCTURAL IMPROVEMENT - MOUTH OF BURNS WATERWAY



MARINA LOCATIONS



GENERAL RECREATION CONCEPTS

RIVER DEVELOPMENT OPTIONS:

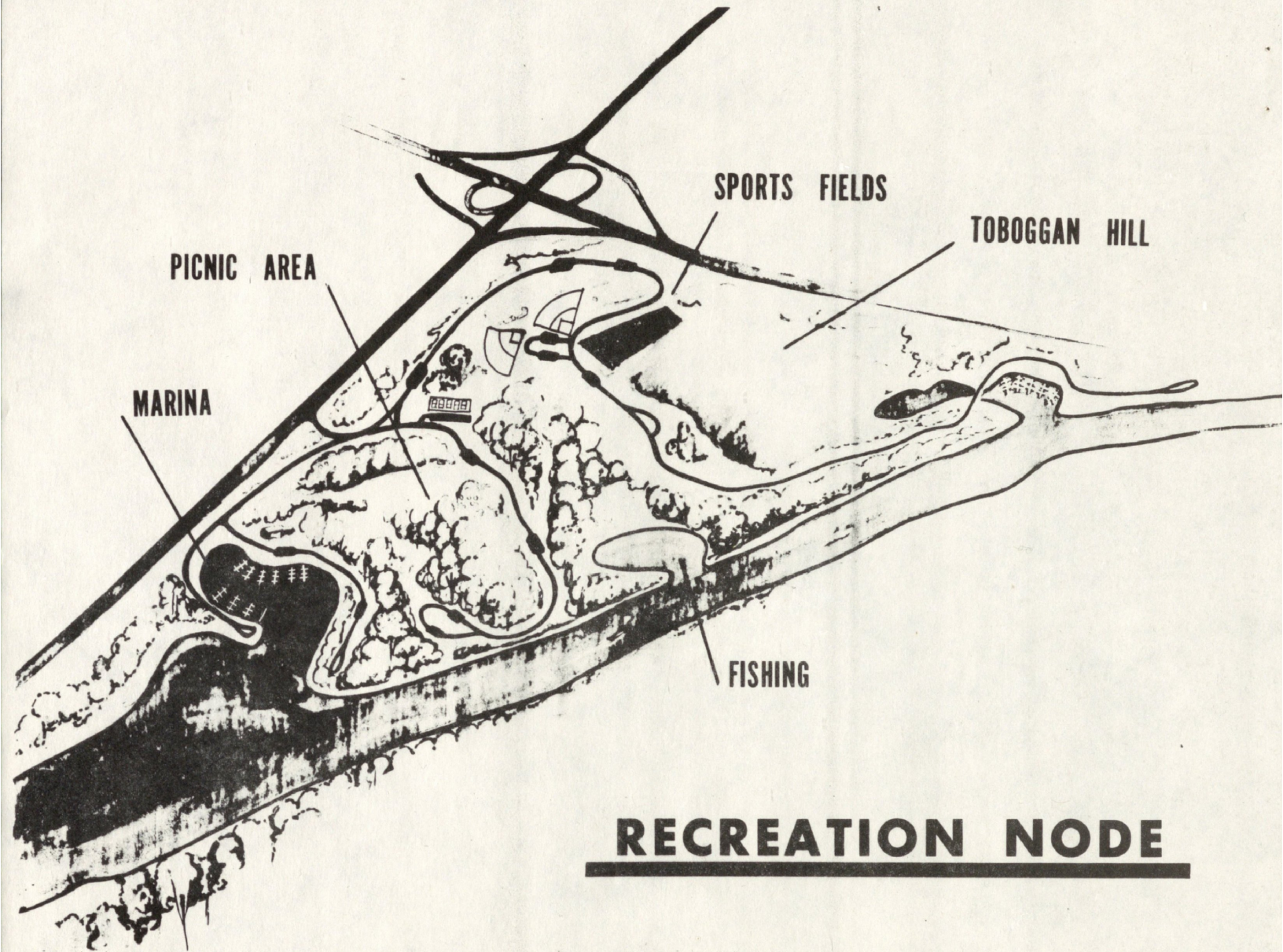
- RIVER RIGHT-OF-WAY
- RECREATION CORRIDOR

TRAILS, PLANTING

RECREATION NODES (SPOIL AREA SITES)

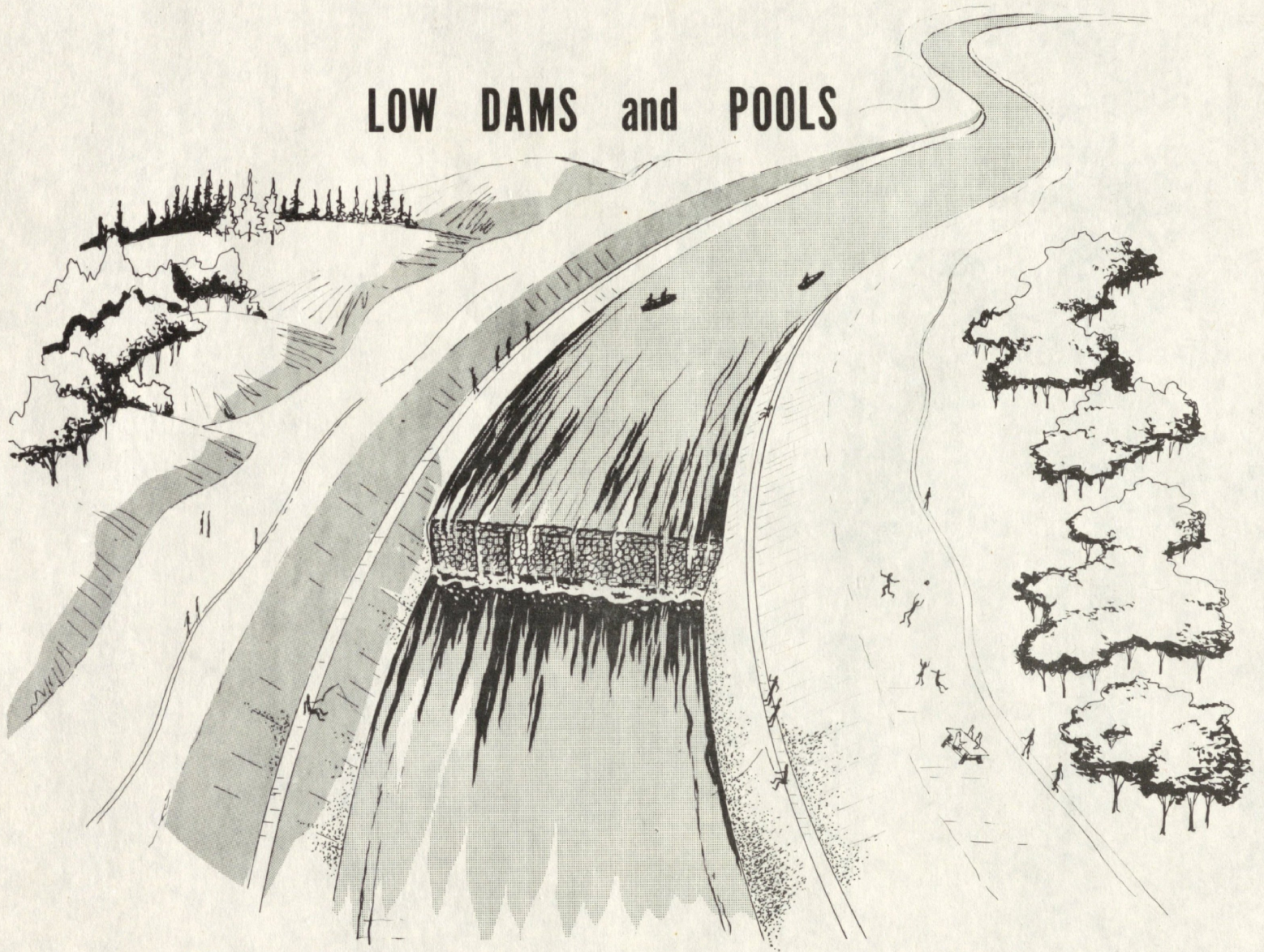
CHANNEL MODIFICATION OPTIONS:

- | | |
|--------------------|---------------|
| • LOW DAMS & POOLS | • PAVED NOTCH |
| • POOLS & RIFFLES | • BURIED PIPE |

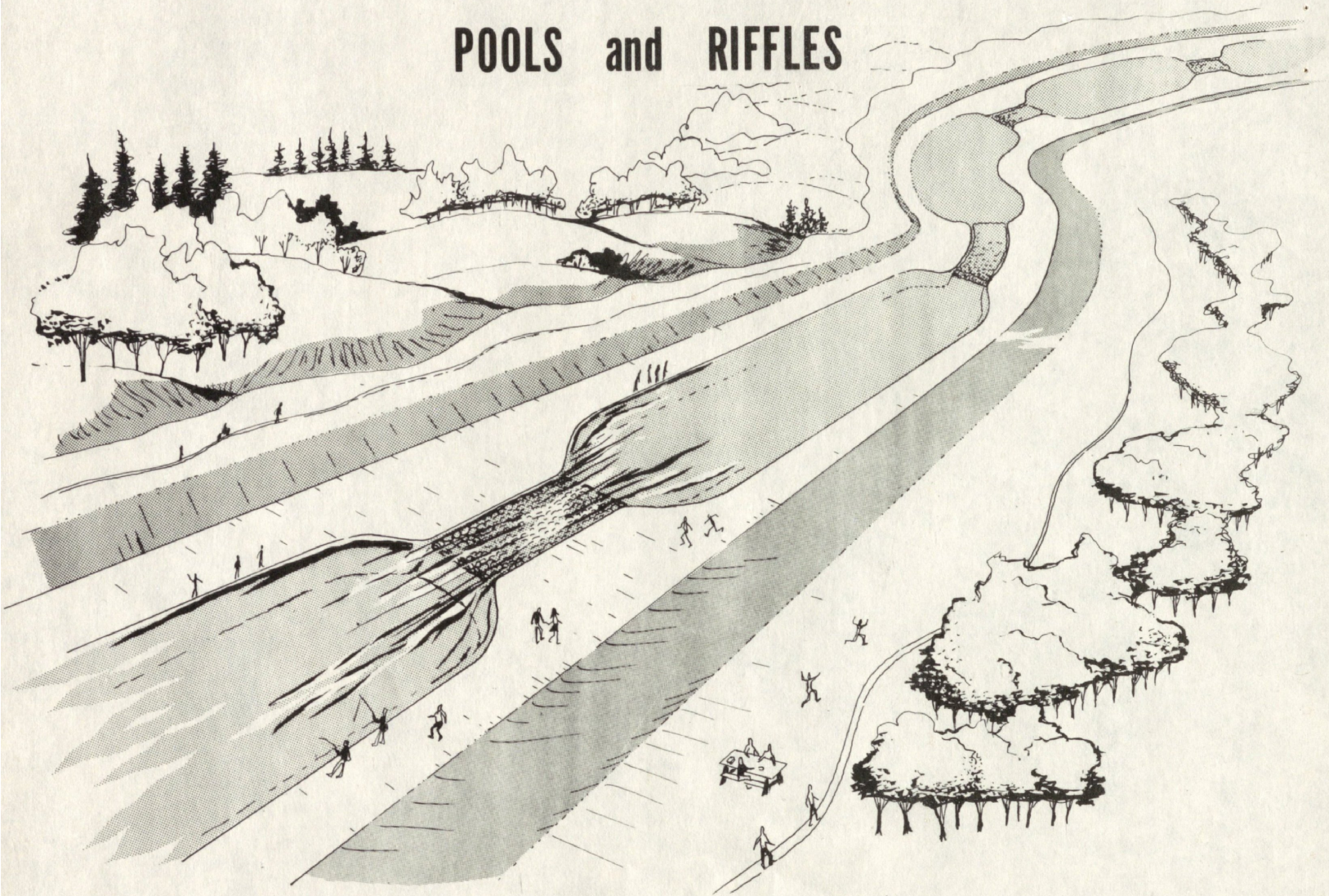


RECREATION NODE

LOW DAMS and POOLS



POOLS and RIFFLES



STUDY SEGMENTS

SEGMENT

REACH

LENGTH

A

LAKE MICHIGAN TO DEEP RIVER

7.9 MILES

B

DEEP RIVER TO HART DITCH

10.3 MILES

C

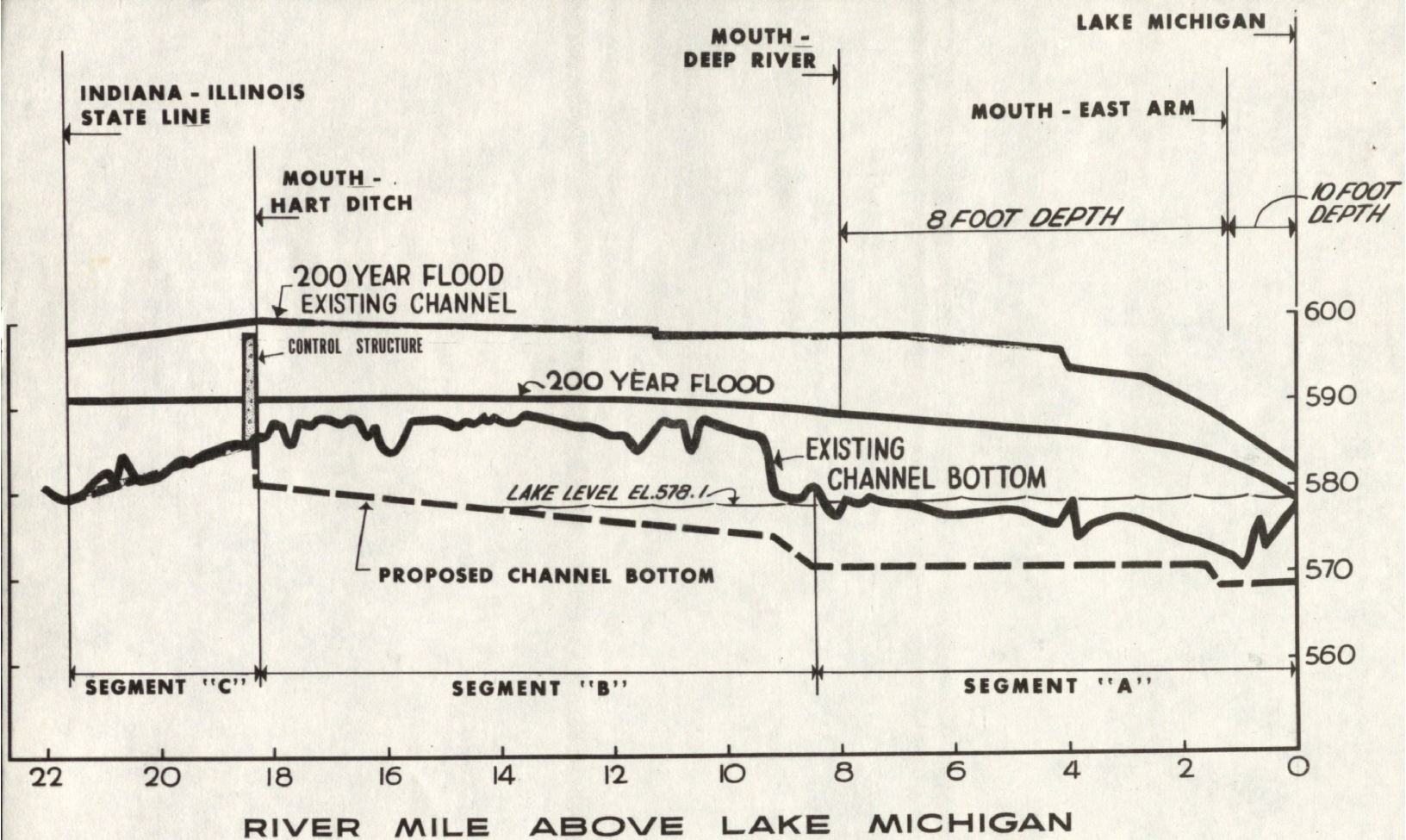
HART DITCH TO STATE LINE

3.3 MILES

ALTERNATIVE PLANS OF IMPROVEMENT

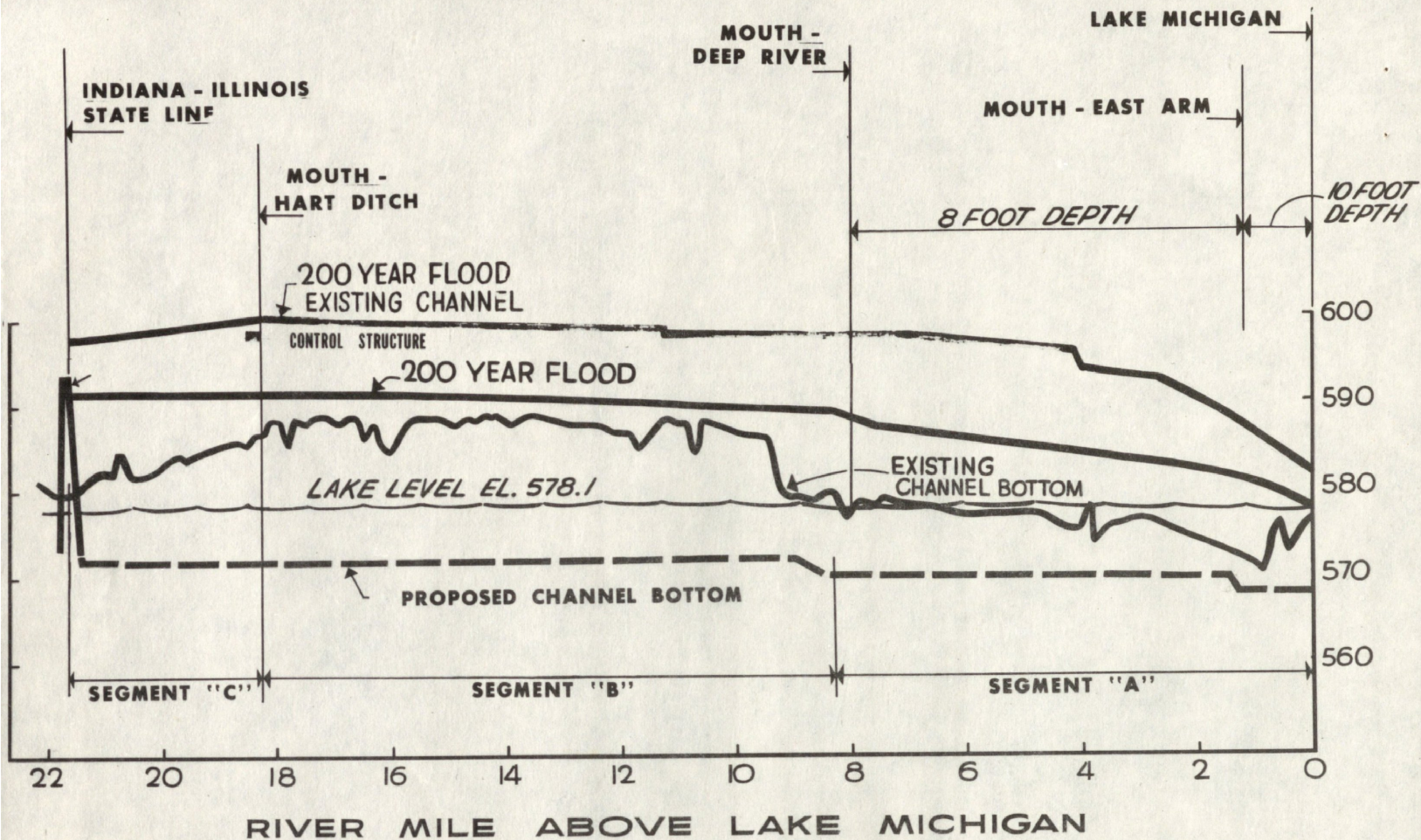
DEVELOPMENT BY SEGMENT (A, B, C) & COSTS (\$ MILLION)

| | RECREATION CORRIDOR & NODES | | | | | RIVER RIGHT-OF-WAY | | |
|--------------------------|-----------------------------|-----------|--------------|-------------|------------|--------------------|-------------|------------|
| | <u>I</u> | <u>II</u> | <u>III A</u> | <u>IV A</u> | <u>V A</u> | <u>III B</u> | <u>IV B</u> | <u>V B</u> |
| CONTROL 200 YEAR FLOOD | A-C | A-C | A-C | A-C | A-C | A-C | A-C | A-C |
| BOAT CHANNEL & MARINAS | A | A-C | A | A | A | A | A | A |
| LOW DAMS & POOLS | | | B-C | | | B-C | | |
| POOLS & RIFFLES | | | | B-C | | | B-C | |
| NOTCH (B), PIPE (C) | | | | | B-C | | | B-C |
| COST (555 BOAT) - TOTAL | 99 | 113 | 112 | 114 | 121 | 103 | 105 | 112 |
| - LOCAL | 43 | 46 | 50 | 51 | 54 | 45 | 46 | 50 |
| COST (1205 BOAT) - TOTAL | | 119 | 118 | 120 | 127 | 109 | 111 | 118 |
| - LOCAL | | 51 | 55 | 56 | 60 | 50 | 51 | 55 |



LITTLE CALUMET RIVER, INDIANA

BOATING TO DEEP RIVER



LITTLE CALUMET RIVER, INDIANA

BOATING TO STATE LINE

CHANNEL BASE WIDTHS

LAKE MICHIGAN

DEEP RIVER

HART DITCH

TO DEEP RIVER

TO HART DITCH

TO STATE LINE

ALTERNATIVE

200 FT.

250 FT.

30 FT.

I, III, IV, V

ALTERNATIVE II

200 FT.

150 FT.

30 FT.

ALTERNATIVE ACREAGE REQUIREMENTS

| | ALTERNATIVES | | | |
|--|--------------|------|------------|------|
| | I | II | III, IV, V | |
| | | | A | B |
| RIVER RIGHT-OF-WAY | 1170 | 1140 | 1170 | 1170 |
| RECREATION CORRIDOR (INCLUDING RIGHT-OF-WAY) | | 1410 | 1450 | |
| SPOIL AREAS | 580 | 660 | 580 | 580 |
| RECREATION NODES (INCLUDING SPOIL AREAS) | | 720 | 720 | |
| MARINAS (555 BOAT CAPACITY) | 150 | 150 | 150 | 150 |
| TOTAL | 1900 | 2280 | 2320 | 1900 |
| MARINAS (ADDITIONAL FOR 1205 BOAT CAPACITY) | | 173 | 173 | 173 |
| TOTAL | 1900 | 2453 | 2493 | 2073 |

COST SHARING APPORTIONMENT

| | <u>FEDERAL SHARE</u> | <u>NON-FEDERAL SHARE</u> |
|--|---------------------------------|-------------------------------------|
| FLOOD CONTROL CHANNEL | 100% | |
| FLOOD CONTROL BRIDGE ALTERATIONS | | |
| • HIGHWAY | | 100% |
| • RAILROAD | 100% | |
| GENERAL BOATING FACILITIES (CHANNELS, JETTY, BRIDGES) | 50% | 50% |
| MARINA FACILITIES (OTHER THAN ENTRANCE CHANNEL & TURNING BASIN) | | 100% |
| GENERAL RECREATION DEVELOPMENT (INCLUDING REAL ESTATE) | 50% | 50% |
| OTHER REAL ESTATE | | 100% |
| UTILITY RELOCATIONS | | 100% |

PRELIMINARY BENEFIT-COST DATA

RANGE OF ANNUAL COSTS

6.4 - 8.6

FOR ALTERNATIVES (\$ MILLION)

RANGE OF ANNUAL BENEFITS

16.3 - 19.7

FOR ALTERNATIVES (\$ MILLION)

RANGE OF BENEFIT-COST RATIOS

2.2 - 2.7

LOW FLOW AUGMENTATION

(MAINTAIN 5 CFS)

| WATER SOURCE | COST (\$ THOUSAND) | |
|-------------------------------------|--------------------|----------------|
| | FIRST | AVERAGE ANNUAL |
| PUMP FROM LAKE MICHIGAN | 2,214 | 131 |
| PUMP GROUND WATER | 1,500 | 87 |
| WASTEWATER TREATMENT PLANT EFFLUENT | 820 | 48 |
| HAMMOND DEPARTMENT OF WATER WORKS | 50 | 57 |

SOCIAL IMPACTS OF PROJECT

RESIDENCES DISPLACED (APPROXIMATELY 22 HOMES)

TRAFFIC DELAYS (DURING BRIDGE WORK)

LAND USE CHANGE (AGRICULTURAL TO RECREATIONAL)

ENVIRONMENTAL IMPACTS OF PROJECT

ADVERSE :

- REMOVAL OF VEGETATION IN CHANNEL AREA
- REDUCTION OF WETLANDS
- TEMPORARY LOSS OF WILDLIFE HABITAT
- LOWER WATER TABLE IN SOME AREAS
- (LOW DAMS LEAST, BOATING CHANNEL GREATEST)

BENEFICIAL :

- PREVENT FLOOD DESTRUCTION
- PROVIDE BALANCED AQUATIC HABITAT
- CREATE TERRAIN RELIEF
- INCREASE DIVERSITY OF NATIVE VEGETATION

ACTIONS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

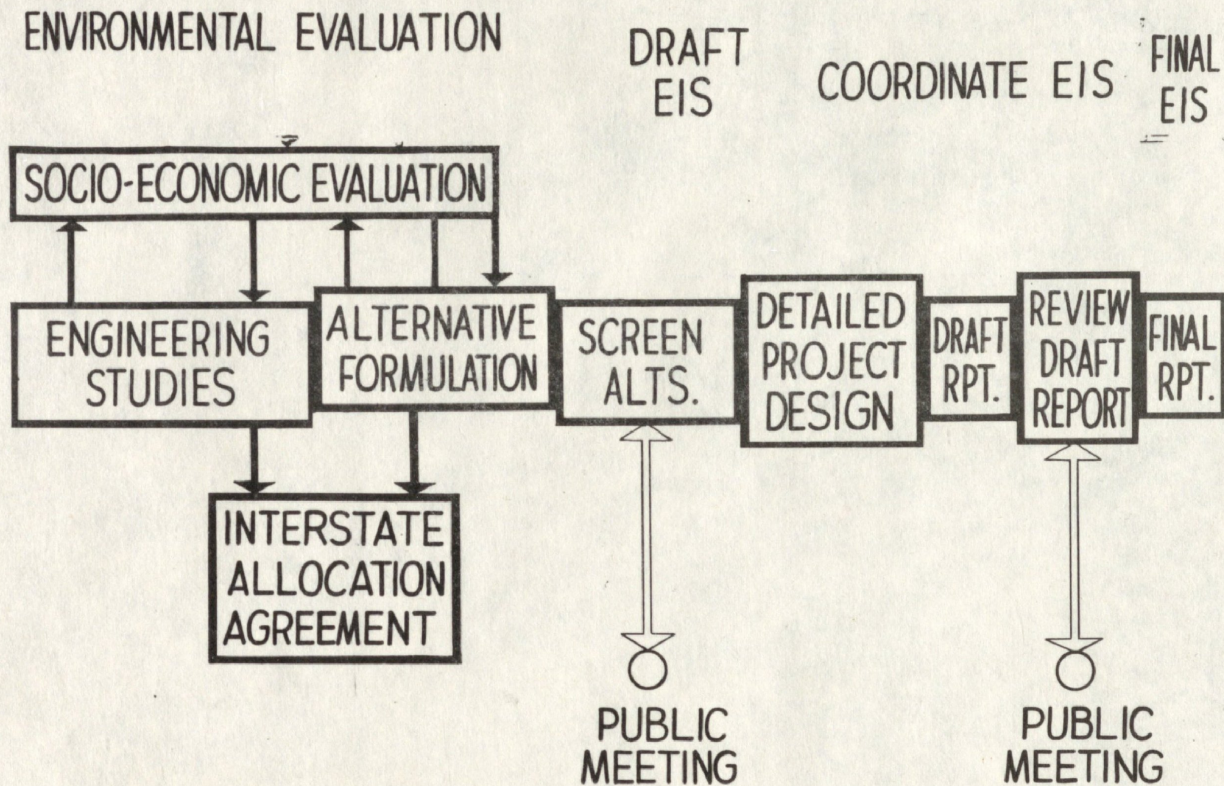
**WIDEN CHANNEL ON ONE SIDE OR ALTERNATE SIDES TO PRESERVE
VEGETATION & ELIMINATE STRAIGHTNESS**

CREATE OXBOW LAKE TO MAINTAIN WETLANDS (BLACK OAK)

REPLACE VEGETATION

**CREATE POOLS IN CHANNEL TO IMPROVE AQUATIC ENVIRONMENT
(ALTERNATIVES III & IV)**

STUDY APPROACH



MILESTONE DATES

| | |
|------------------------------------|-------------|
| ALTERNATIVE PUBLIC MEETING | MAY 1973 |
| SELECT RECOMMENDED ALTERNATIVE | JUNE 1973 |
| DISTRIBUTE DRAFT EIS FOR REVIEW | JULY 1973 |
| DISTRIBUTE DRAFT REPORT FOR REVIEW | JULY 1973 |
| FINAL PUBLIC MEETING | AUGUST 1973 |
| SUBMIT FINAL REPORT | SEPT. 1973 |

ISSUES TO BE RESOLVED

FLOW ALLOCATION AGREEMENT BETWEEN INDIANA AND ILLINOIS

**INTENT TO PROVIDE LOCAL ASSURANCES BY A
LOCAL SPONSORING AGENCY**

SELECTION OF RECOMMENDED ALTERNATIVE

**NOTE : PROJECT COMPLETION CONTINGENT UPON UPGRADING
WASTEWATER FACILITIES TO MEET
ESTABLISHED WATER QUALITY STANDARDS**